

Problem 4.20: Demodulating an AM Signal .....	185
Problem 4.21: Unusual Amplitude Modulation .....	186
Problem 4.22: Sammy Falls Asleep... ..	187
Problem 4.23: Jamming .....	188
Problem 4.24: AM Stereo .....	189
Problem 4.25: Novel AM Stereo Method .....	190
Problem 4.26: A Radical Radio Idea .....	191
Problem 4.27: Secret Communication .....	191
Problem 4.28: Signal Scrambling .....	192
4.12 Solutions to Exercises in Chapter 4.....	192
<b>Chapter 5 Digital Signal Processing .....</b>	<b>196</b>
5.1 Introduction to Digital Signal Processing.....	196
5.2 Introduction to Computer Organization .....	197
5.2.1 Computer Architecture .....	197
5.2.2 Representing Numbers .....	198
Exercise 5.2.1 .....	199
Exercise 5.2.2 .....	200
5.2.3 Computer Arithmetic and Logic .....	200
Exercise 5.2.3 .....	201
5.3 The Sampling Theorem .....	201
5.3.1 Analog-to-Digital Conversion .....	201
5.4 The Sampling Theorem.....	202
Exercise 5.3.1 .....	204
Exercise 5.3.2 .....	204
Exercise 5.3.3 .....	205
5.5 Amplitude Quantization.....	205
Exercise 5.4.1 .....	206
Exercise 5.4.2 .....	208
Exercise 5.4.3 .....	208
Exercise 5.4.4 .....	208
5.6 Discrete-Time Signals and Systems .....	208
5.6.1 Real-and Complex-valued Signals .....	209
5.6.2 Complex Exponentials .....	209
5.6.3 Sinusoids .....	209
5.6.4 Unit Sample.....	210
5.6.5 Unit Step .....	210
5.6.6 Symbolic Signals .....	211
5.6.7 Discrete-Time Systems .....	211
5.7 Discrete-Time Fourier Transform (DTFT) .....	211
5.8 Discrete Fourier Transforms (DFT) .....	217
5.9 DFT: Computational Complexity.....	220
5.10 Fast Fourier Transform (FFT).....	221
5.11 Spectrograms.....	224
5.12 Discrete-Time Systems .....	228
5.13 Discrete-Time Systems in the Time-Domain.....	228
5.14 Discrete-Time Systems in the Frequency Domain .....	233